

# THE PLOTTER

CLACKAMAS COMPUTER APPLIED  
TRAINING SOCIETY  
NEWS LETTER

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OCTOBER 1994

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# MEETING

The OCTOBER meeting will be:

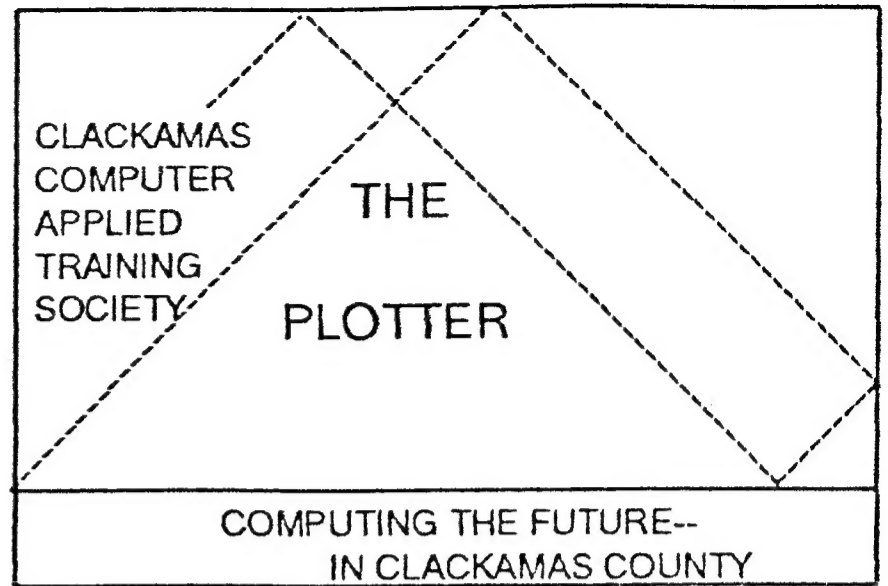
on: SUN., OCTOBER 16, 1994

MEETING 2:00 TO 5:00 P.M.

at: Rod Gowen's home  
14784 S. Quail Circle  
Oregon City

**WHAT YOU WILL FIND IN THIS ISSUE:**

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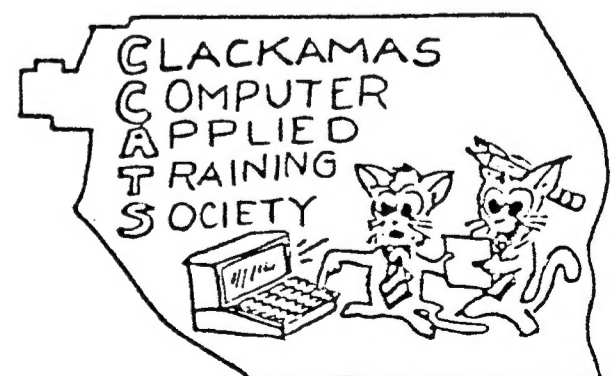
## FROM THE EDITOR'S DESK

There is an interesting article in PCNOVICE magazine, November 1994 issue concerning the possible demise of MSDOS operating system in favor of Windows operating system. The author compares the comments and use of the very latest MSDOS system that operates under the Windows system with the comments and use of the older 286 machine that operates under the MSDOS system. Users of both systems seem to be quite satisfied with what they have. The key is software.

While the MSDOS group is very large, they are not investing in great quantities of new software. In fact, sales in the 3rd quarter of 1992 were about 45% while the 1st quarter of 1994 amounted to only 21%. In comparison Windows for the same time period was 34% and 61% of market share (in dollars).

This reads much like our experience with Timex/Sinclair. Many of us have been quite satisfied with this equipment. Granted that improvements were made in program storage facilities and other add-ons. Likewise the art of programming

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Continued from page 1  
advanced over the years. MSDOS has had the advantage of program improvements. But it reads like MSDOS is experiencing the same pattern of reduced new programs that has plagued T/S users for years. So much for that old Maxwell car that Chrysler used to build in the 1920s, or was it 1930s?

Rod Gowen tells it like it is in this issue. A very small membership base, 2 or 3 members doing the work to produce this monthly publication, almost zero attendance at our monthly meeting, interest mostly in MSDOS and Windows with their associated programs (mostly word processing and desk top publishing). Those who still use T/S equipment are quite satisfied with what it does. In some cases people are still using the programs they started with years ago. So why purchase new programs when the old does everything one wishes for?

I believe that some of us have an inquisitive streak that seems to relish working out problems with equipment and programs while others could care less as long as everything works. The early days of T/S operations was certainly a trial and error situation that discouraged many. Maybe we liken our computer experiences with being able to work on the old car, even without service manuals, with those 1994-5 shiny sporty cars that are computer controlled that have plug-in ports for test equipment that we cannot buy. Leave it at the side of the road and have it towed if something goes wrong.

What it boils down to, does anybody out there care if we do or don't publish our newsletter. We know a few people care enough to purchase a subscription. What about the others we never hear from?

## IS ANYONE OUT THERE?

by: Rod Gowen

Here we are, over 13 years after the formation of our little group, still publishing our little newsletter. What we need to know at this time is: Are we serving any purpose? Is there anyone out there reading this? Would we be missed?

These questions need to be answered! A lot of time and effort goes into editing and publishing even a small newsletter. With only 2 or 3 of us doing the work, it gets harder each month. If there are people who would like to see THE PLOTTER continue, it will take a couple of things:

1. We need some input from our readership--either programs or articles can be sent to us for publication. An article can be a hardware, software or book review or even tutorials. If you have a short piece about what you do on and with your computer system, we would like to share it. We do not expect that each item we receive to be of professional quality. None of us are professional writers. Items can be submitted on disk in either LKDOS or Oliger format for either Tasword or Mscript. It can even be on an MS-DOS disk in ASCII format! It can pertain to ANY computer system that you are using.

2. We want to hear from our readers telling us that someone is out there and appreciates what efforts are being put forth to ensure that the newsletter gets out each month. A "letter to the editor" or general comments would be appreciated. Criticism is always welcome--pro or con! We are not so proud as to think that there is no room for improvement. If we are to continue, we want the newsletter to reflect, at least in part, the likes and dislikes of the readership. The problem is, we don't know what you do or do not like if you don't let us know!

Each year, we lose more and more members, groups and newsletters. At

the present rate of decline, there soon will be no one publishing a newsletter on a monthly basis. There may not be any newsletters that will publish TS information! That will be a sad day for those of us who "cut our teeth" on Sinclair products. Just because you move on to an IBM clone or an APPLE product, do you have to forget your "roots"? Why not continue to share your computer stories with those of us who want to hear them?

We'll be waiting to hear from you!

## THE ZIKE

by: Rod Gowen

Have you heard of the ZIKE?

If Not, you can probably guess from the name itself who's brainchild it is. That's right! Our old friend, Sir Clive Sinclair is at it again! This time he is going after the bicycle market. After the C-5 electric car flopped, we all know that he went back to computers and came up with the Z88. After that, I heard he was hard at work on a parallel processor of some sort. After that, I had not heard of him until the other day while watching the Discovery Channel on one of the "what's new" type programs.

Seems like Sir Clive wanted to come up with a lighter, more efficient, electric bicycle. He did--THE ZIKE. According to the report, the Zike weighs in at about the same weight as a conventional racing bike. It has pedals and an electric motor with battery pack. It actually looks more like an old fashioned scooter (like the ones kids used to put one foot on and push with the other foot, remember?) than it does a bike. the tires look to be about 8-10 inch diameter and the pedals look too close to the ground. But, according to the reporter testing it, it rides well and does what it was designed to do. It can sustain a 12 KPH speed for about 30-60 minutes, depending upon terrain and weather. With a bit of pedal assist

on the hills and such, the Zike can go about 90-120 minutes between charges. And--recharging the batteries takes only 1 hour!

The innovations built into the Zike are, besides the fast charging time, the new lightweight electric motor and the newest in battery technology. He designed a special printed circuit board that actually computes the amount of current needed at any particular time and does not deliver any more than is actually needed. (Maybe he found a use for the old ZX-80/81 motherboards?) In any case, the system extends the life of the batteries far beyond what was previously possible. It also makes smaller batteries usable. The new DC motor is also set up to give the highest possible torque with the least possible current draw.

Now comes the bad news---the price! The selling price in England is 500 POUNDS STERLING! That's over \$1000! Not exactly in the range of everyday bicycle riders. Sir Clive hopes to make a dent in the huge European bicycle market with the Zike. I can't honestly see that happening until the price drops considerably.

## MILL CIRCULAR POCKETS

Numerical control (NC) of milling machines is an interesting study, mainly because these big machine shop tools are computer-controllable in 3 axis. A milling machine can be as simple as a drill press that has a movable work table with hand controls for the x, y, and z axis.

Kiwanda Machine Works, owned by one of my sons, was running into the simple problem of programming the machine to cut an elliptical pocket of constant depth in a part. As in generating a circular pocket, all of the metal must be removed within the elliptical walls. For a circular pocket this has been done by programming a series of concentric circles that would cause all of the metal to be ultimately be removed.

Continued from page 3

A different method would be to program a spiral path of the milling cutter that would start at the center and remove metal in a spiral pattern and then program a circle cut that would clean up the outer edge of the spiral cut. A final slower feed circular cut would then bring the pocket to exact dimension. Such a program would start the first circle clean-up cut where the spiral cut ended, making a 360 degree cut, then the final cut would start where the first circle cut ended.

To get back to the first problem of elliptical pockets, this would be programmed just like a circular pocket, except using formulas for elliptical shapes in place of circles.

The reader can run his own "milling machine" by using the 2 programs for milling cutting, his monitor displaying what the milling machine cutter would be doing. However, we will first try the concept with 2 programs that show the path for the center of the milling cutter in a 3 1/2 inch cube, using a 0.250 inch diameter tool. Our program for giving the screen display is scaled so 12 pixels equals 0.250 inches, or 1 inch = 48 pixels. The pocket diameter is to be 3.000 inches, which is 144 pixels.

The first program produces a spiral path, then the 360 degree clean-up path, and last the finish circular cut to final dimension of 3.000 inches.

The second program is of particular interest because it uses a circle of 12 pixels diameter to represent a 0.250 inch milling cutter in action (program line 60). In fact, this circle is used to plot the milling cutter path in place of a single pixel! While it takes a long time to complete the program (the first program takes about 4 minutes), it is interesting to watch the "milling cutter" slowly work its way through the spiral path, the clean-up cut, and last, the final cut to

dimension. Just have a large mug of coffee handy.

Once the concept is worked out for a circle, it is simply a matter of using a formula for an ellipse in place of the circle formula for making an elliptical pocket. My "milling machine" demonstration maintains 3.000 inches for the major diameter but changes to 2.000 inches for the minor diameter. To do this the y axis radius is reduced from 72 to 48 pixels.

The program uses the screen center as  $x=127$  and  $y=87$ . The x equation does not change for the ellipse but the y ( $87+c+a*\cos a$ ) is changed to 1.333. Also, the use of the circle command in place of plot permits the use of a radius of 6 to generate all of those small circles to emulate a cutter tool (lines 20,60 & 90).

```
5 REM 9/9/94 DICK WAGNER
8 PLOT 43,3: DRAW 168,0: DRAW
0,168: DRAW -168,0: DRAW 0,-168
10 FOR a=0 TO 10*PI STEP PI/15
0
15 REM 10*PI = a spiral with 5
passes
20 PLOT 127+(2*a)*SIN a,87+(2*
a)*COS a
30 NEXT a
40 REM generate circular path
to clean up spiral cutting.
50 FOR b=0 TO 2*PI STEP PI/150
60 PLOT 127+20*PI*SIN b,87+20*
PI*COS b
70 NEXT b
75 REM generate cutter path
for final accurate pocket radius
80 FOR c=0 TO 2*PI STEP PI/150
90 PLOT 127+20.69*PI*SIN c,87+
20.69*PI*COS c
95 NEXT c
100 REM radius of cutter path
to finish 3.000 diameter cavity
110 REM radius = 72 pixels for
1.500 radius, finished cavity
120 REM cutter = .250 inches,
arbitrary 12 pixels
```

130 REM scale is 1 inch = 48 pixels

150 REM This diagram depicts the center of the cutter path in producing a cavity in a metal block. The cavity is 3.000 inches in diameter.

```
4 REM elippath
5 REM 9/9/94 DICK WAGNER
8 PLOT 43,3: DRAW 168,0: DRAW
0,168: DRAW -168,0: DRAW 0,-168
10 FOR a=0 TO 10*PI STEP PI/15
0
```

15 REM 10\*PI = a spiral with 5 passes

```
20 PLOT 127+(2*a)*SIN a,87+(1.
333*a)*COS a
```

```
30 NEXT a
```

40 REM generate circular path to clean up spiral cutting.

```
50 FOR b=0 TO 2*PI STEP PI/150
```

```
60 PLOT 127+20*PI*SIN b,87+13.
33*PI*COS b
```

```
70 NEXT b
```

75 REM generate cutter path for final accurate pocket radius

```
80 FOR c=0 TO 2*PI STEP PI/150
```

```
90 PLOT 127+20.69*PI*SIN c,87+
14.02*PI*COS c
```

```
95 NEXT c
```

100 REM radius of cutter path to finish 3.000 diameter cavity

110 REM radius = 72 pixels for 1.500 radius, finished cavity

120 REM cutter = .250 inches, arbitrary 12 pixels

130 REM scale is 1 inch = 48 pixels"

150 REM This diagram depicts the center of the cutter path in producing a cavity in a metal block. The cavity is 2.000 x 3.000 elliptical shape.

2 REM cutcircle

5 REM 9/9/94 DICK WAGNER

```
8 PLOT 43,3: DRAW 168,0: DRAW
0,168: DRAW -168,0: DRAW 0,-168
10 FOR a=0 TO 10*PI STEP PI/15
0
```

15 REM 10\*PI = a spiral with 5 passes

```
20 CIRCLE 127+(2*a)*SIN a,87+(
2*a)*COS a,6
```

```
30 NEXT a
```

40 REM generate circular path to clean up spiral cutting.

```
50 FOR b=0 TO 2*PI STEP PI/150
```

```
60 CIRCLE 127+20*PI*SIN b,87+2
0*PI*COS b,6
```

```
70 NEXT b
```

75 REM generate cutter path for final accurate pocket radius

```
80 FOR c=0 TO 2*PI STEP PI/150
```

```
90 CIRCLE 127+20.69*PI*SIN c,8
7+20.69*PI*COS c,6
```

```
95 NEXT c
```

100 REM radius of cutter path to finish 3.000 diameter cavity

110 REM radius = 72 pixels for 1.500 radius, finished cavity

120 REM cutter = .250 inches, arbitrary 12 pixels

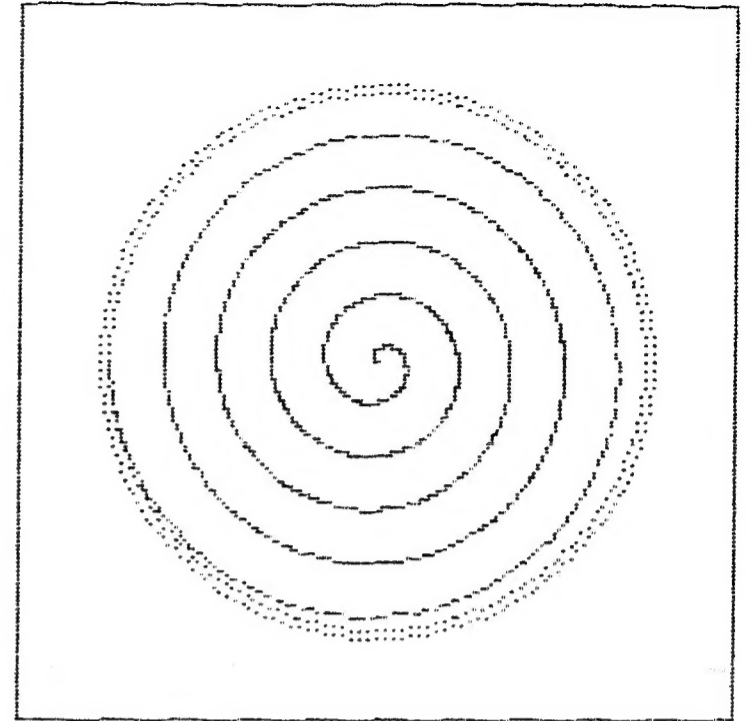
130 REM scale is 1 inch = 48 pixels"

150 REM This diagram depicts producing a cavity in a metal block. The cavity is 3.000 inches in diameter.

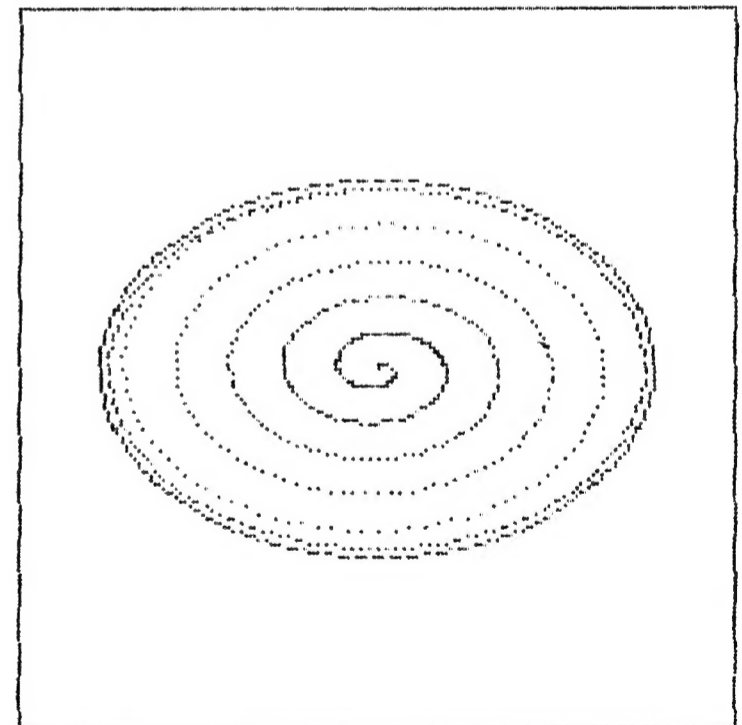
```

4 REM elipcut
5 REM 9/9/94 DICK WAGNER
8 PLOT 43,3: DRAW 168,0: DRAW
0,168: DRAW -168,0: DRAW 0,-168
10 FOR a=0 TO 10*PI STEP PI/15
0
15 REM 10*PI = a spiral with 5
passes
20 CIRCLE 127+(2*a)*SIN a,87+(
1.333*a)*COS a,6
30 NEXT a
40 REM generate elliptical path
to clean up spiral cutting.
50 FOR b=0 TO 2*PI STEP PI/150
60 CIRCLE 127+20*PI*SIN b,87+1
3.33*PI*COS b,6
70 NEXT b
75 REM generate cutter path
for final accurate pocket dimensions.
80 FOR c=0 TO 2*PI STEP PI/150
90 CIRCLE 127+20.69*PI*SIN c,8
7+14.02*PI*COS c,6
95 NEXT c
110 REM radius = 72 pixels for
1.500 radius, finished cavity
120 REM cutter = .250 inches,
arbitrary 12 pixels
130 REM scale is 1 inch = 48 pixels"
150 REM This diagram depicts
the cutter path in producing an
elliptical cavity in a metal block. The cavity is 2.000 x 3.000
elliptical shape.

```



CUTTER PATH  
3.500 CUBE  
3.000 CIRCULAR RECESS



CUTTER PATH  
3.500 CUBE  
2.000 X 3.000 ELIPTICAL RECESS

# RMG UPDATE NEWS FOR OCTOBER 1994

VOLUME 6, NUMBER 10

\*\* RMG NEWS \*\*

RMG is sorry for any inconvenience that our customers may have incurred due to the apparent delays in receiving orders. The truth is, there have actually been only slight delays in some instances. Most of our literature and ads have always said "PLEASE ALLOW 4-6 WEEKS FOR DELIVERY" and we are now amending this to read "PLEASE ALLOW 6-8 WEEKS FOR DELIVERY". There are many reasons for this minor change.

First of all, for shipping, we have gone to an almost total U.S. Postal Service method. This is due to the constant increases that UPS has been making in their shipping rates over the past 2-3 years. They have raised shipping rates an average of 10% per year for the past 4 years. This increase tends to make U.S. Mail more cost effective in all but the most heavy cases. If we have to ship more than 20 pounds, we will use UPS, otherwise the order will go out by mail. All books and cassettes are going by BOOK RATE, which can take up to 3-4 weeks to arrive. If we only take a week or two to get the order out (not likely) it would still be 6 weeks for it to arrive at destination!

Second, due to failing vision and a recent major move of our inventory, it now takes quite a while to find items that may be ordered. I will not apologize for my failing eyes, as I have no control over them. I would request that anyone ordering from RMG take this into account and PLEASE PRINT OR TYPE YOUR ORDER! If I have to have someone else read and decipher a letter/order, it takes longer to get them done.

Our apologies for the added delay on shipping the Best Of The Plotter companion disk. The person working on getting it ready has had some personal problems, but is doing his best to get it done as fast as he can and still maintain the quality of the product. When the work is being done on a strictly volunteer basis, one has to take one's time and not put pressure on the volunteer. After all, they are not obligated to do the job except by their word. It will get done and be shipped! We guarantee it! It may take a while longer, but it will get there, just as the book did.

We want to thank T/SNUG and Zxir Qlive Alive! and UPDATE magazine for running our ads. We, in turn, promote these two fine publications at every chance. We hope that both have added new subscribers due to our efforts. If any of our readers would like the names and addresses of other publications and user groups or vendors, just call or write. If you write, please include a #9 or #10 S.A.S.E.. We will do our best to respond as quickly as possible.

**REMEMBER! WE WILL SUPPORT YOU--AS LONG AS YOU SUPPORT US!**

KEEP WATCHING' FOR MORE NEWS! Rod Gowen. Owner. RMG Enterprises  
14784 South Quail Grove Circle. Oregon City, OR 97045  
503/655-7484 8AM-6PM PT \* FAX/VOICEMAIL: 503/655-4116 24 HRS

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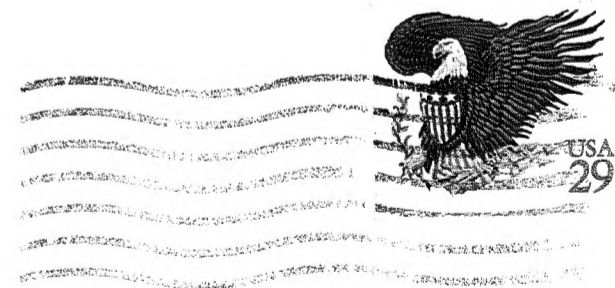
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